

## ABSTRACT OF THE DISCLOSURE

The present invention relates to a method of manufacturing a waveguide using an ion exchange process. The present invention controls the refractive index and the thickness of a surface layer on a glass substrate using an ion exchange process, forms the waveguide pattern on the surface layer by means of photolithography and etching process and coats with materials having the refractive index same to or lower than that of the glass substrate to form a cladding layer. Accordingly, the present invention can manufacture a planar waveguide, which is excellent in dimension control and reproducibility and has a sharp step wall.